

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 17-36 are present active in this case, Claims 1-16 canceled and Claims 17-36 added by way of the present amendment.

In the outstanding Office Action, the specification was objected to for minor informalities; Claims 6, 7, and 11-16 were rejected under 35 U.S.C. § 112, second paragraph; Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Japanese Utility Model 63-121282; Claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘282 Utility Model; Claims 3, 5-8, and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘282 Utility Model in view of U.S. Patent No. 5,896,916 to Baechner et al.; Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘282 Utility Model in view of U.S. Patent No. 6,401,804 to Shimoya et al.; Claims 9 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘282 Utility Model in view of Baechner and further in view of Shimoya et al.; and Claims 12-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the ‘282 Utility Model in view of Baechner and Shimoya, and further in view of U.S. Patent No. 4,201,263 to Anderson.

With regard to the objection to the specification, Applicants have amended the specification to address the informality noted in the outstanding Office Action. Therefore, the objection to the specification is overcome.

With regard to the rejection under 35 U.S.C. § 112, second paragraph, Claims 6, 7, and 11-16 have been canceled, and therefore the rejection is now moot.

Turning now to the merits, in order to expedite issuance of a patent in this case, Applicants have added new Claims 17-36 which clarify the patentable features of the present invention over the cited references. Specifically, Applicants’ Claim 17 recites

...arranging a pressure member having a length greater than the distance between the projections at the opposite end portions of the side plate, between the upright walls of the side plate in contact with the projections at the opposite end portions;

binding the pressure member, the side plate, the heat exchange tubes and the corrugated fins together with fastening members provided at locations to both sides of the projections with respect to a longitudinal direction of the side plate...

An example method covered by these claim features is shown in Figures 4 and 5 of Applicants' specification as originally filed. As seen in these figures, a corrugated fin 6 is provided between a side plate 5 and an end tube of the refrigerant tubes 11. The side plate 5 includes projections 13 and 14, and a pressure member 20 is placed in contact with the pressure members as best seen in Figure 5. Then, the fastening members 21 are bound around the pressure member 20, side plate 5, corrugated fin 6 and refrigerant tube 11. As a consequence, as shown in Figure 5, the side plate 5 is deflected at end portions thereof. As described in Applicants' specification, this deflection of the side plate provides a strong force for holding the corrugated fin 6 interposed between the side plate 5 and the refrigerant tube 11.¹ Therefore, unlike the conventional heat exchangers described in the background section of Applicants' specification, the heat exchanger of the claimed invention provides a strong holding force of the corrugated fin between the side plate 5 and end refrigerant tube 11 such that the corrugated fin does not slip out in between these two objects.

In contrast, the '282 Utility Model discloses a heat exchanger having a side plate 19, exchange tubes 5 and corrugated fins 3, which are bound with a wire 20 at a portion of the projection 21 of the side plate 19 (reinforcing member). However, the '282 Utility Model does not include a pressure member for providing a force to the projection 21, and thus also does not describe binding the pressure member in the heat exchanger assembly. That is, the the '282 Utility Model does not disclose the features of Claim 17 quoted above. Therefore,

¹ See US 2006/0272801 (hereafter "Applicants' specification") at paragraph [0063].

the '282 Utility Model cannot provide the increased holding force of the corrugated fins described in Applicants' specification.

With regard to new Claim 32, this claim similarly recites,

...providing a pressure member in contact with the plurality of projections of the side plate; and

binding a fastening member around the plurality of refrigerant tubes, the corrugated fins, the side plate and the pressure member such that the fastening member causes the pressure member to apply a force to the plurality of projection members thereby deflecting a portion of the side plate toward the end refrigerant tube to create a strong holding force on the corrugated fin in the end space...

Thus, Claim 32 also recites a pressure member and binding the pressure member, and this claim patentably defines over the '282 Utility Model for the reasons noted with respect to Claim 17. In addition, however, Claim 32 explicitly recites deflection of the side plate, which is not disclosed in the '282 Utility Model. This provides an additional basis for patentability over the '282 Utility Model.

The secondary references are cited for teachings of features within the dependent claims, and do not correct the deficiencies of the '282 Utility Model. In this regard, the dome 20 of Baechner does not provide the projections as now recited in Claims 17 and 32. Therefore, Claims 17 and 32 patentably define over the cited references.

As Claims 17 and 32 patentably define over the cited references, Claims 18-31 and 33-36, which depend from Claims 17 or 32, also patentably define over the cited references. Nevertheless, Applicants note that Shimoya merely describes that the projection rib 14 of plates 12a, 12b and 12c has a height of up to 2mm, but does not the height of a projection of a side plate as recited in several of the new dependent claims, which provides an additional basis for patentability of claims including this feature.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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